

**FINAL**

**ENVIRONMENTAL ASSESSMENT**

**FOR QSEU116038 – LOWER**

**PATTERN ALTITUDE AT**

**MOODY AIR FORCE BASE,**

**GEORGIA**



**April 2012**

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# **Finding of No Significant Impact**

## **Lower Pattern Altitude at Moody Air Force Base, Georgia**

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Moody Air Force Base (AFB) has prepared an Environmental Assessment (EA) that evaluates the potential environmental impacts associated with officially lowering the Moody AFB A-10 aircraft visual flight rules (VFR) overhead flight pattern from 2,000 feet above ground level (AGL) to 1,500 feet AGL. The VFR overhead flight pattern altitude is the altitude at which aircraft operating under visual flight operations (as opposed to using instruments) typically use while maneuvering in the airfield to line up for runway approach.

### **DESCRIPTION OF THE PROPOSED ACTION - SECTION 2.2 OF THE EA**

Under the Proposed Action, Moody AFB would lower the A-10 aircraft VFR overhead flight pattern from 2,000 feet AGL to 1,500 feet AGL. A 1,500-foot AGL VFR overhead flight pattern is the standard VFR overhead flight pattern AGL requirement for the A-10 aircraft. The current Moody AFB A-10 aircraft VFR overhead flight pattern is set at a minimum of 2,000 feet AGL, and A-10 aircraft only utilize the 1,500-foot AGL VFR overhead flight pattern when weather does not permit a VFR overhead flight pattern of 2,000 feet. This occurs often due to changing weather and climate conditions inherent to southeastern Georgia. The proposed VFR overhead flight pattern change would occur in Class D airspace only (airspace immediately surrounding the Moody AFB airfield) and would not affect instrument flight rules (IFR) overhead flight patterns.

The 2,000-foot AGL VFR overhead flight pattern is associated with the previous Moody AFB training mission utilizing T-38 aircraft. When the Moody AFB mission changed from the T-38 to the A-10, the VFR overhead flight pattern was never officially changed to coincide with the A-10 standards. Moody AFB needs to lower the current A-10 VFR overhead flight pattern from 2,000 feet AGL to 1,500 feet AGL to meet standard A-10 overhead flight pattern technical order guidance and current mission needs. Additionally, the Moody AFB C-130 aircraft VFR overhead flight pattern is currently set to 1,500 feet AGL and was established when the C-130 mission arrived at Moody AFB. Therefore, other aircraft at Moody AFB already fly at 1,500 feet AGL.

## **No Action Alternative – Section 2.4 of the EA**

Under the No Action Alternative, the Air Force would not officially lower the A-10 VFR overhead flight pattern altitude and would maintain a 2,000-foot AGL VFR overhead flight pattern altitude. Pattern altitude would continue to be temporarily set to 1,500 feet AGL only as necessary to accommodate weather conditions. This would not meet standard A-10 technical order guidance and would result in continued coordination requirements with air traffic control (ATC) when weather disallows VFR overhead flight pattern operations at 2,000 feet AGL.

## **ENVIRONMENTAL CONSEQUENCES – CHAPTER 4 OF THE EA**

### **Proposed Action**

No significant impacts have been identified under the Proposed Action. Noise levels near the installation would increase slightly as a result of A-10 aircraft operating regularly at the proposed lower pattern altitude. An additional 59 acres of land (not residential) would be affected by noise levels at or exceeding 65 decibels (dB) day-night average sound level (DNL), and noise levels at representative noise-sensitive receptors would increase by 1 dB DNL or less.

The 1,500-foot AGL VFR overhead flight pattern altitude is standard and has been used on an as-needed basis with no additional flight safety issues. Lowering the A-10 VFR overhead flight pattern altitude may slightly increase the potential for bird-aircraft strike hazard (BASH) risks, but increased risk potential would be expected to be minimal given current Moody AFB BASH program requirements. Current air traffic control procedures, once modified to the lower A-10 VFR overhead flight pattern altitude, would continue to ensure minimum aircraft separation for aircraft operating in Moody AFB airspace. The proposed change would not be expected to result in reduced pattern capacity. Lowering the A-10 VFR overhead flight pattern altitude would not be expected to result in any significant airspace management issues. No low-income or minority populations would be adversely affected by the Proposed Action; thus, no environmental justice impacts would occur.

### **No Action Alternative**

The No Action Alternative would not result in any additional impacts to the environment beyond the scope of normal conditions and influences within the Proposed Action's region of influence.

## PUBLIC/AGENCY REVIEW

The Air Force published a public notice in the *Valdosta Daily Times* on February 19, 2012, inviting the public to review and comment on the EA (available at the South Georgia Regional Library in Valdosta, Georgia). The Air Force also provided the following agencies copies of the EA for review and comment: Georgia State Clearinghouse, Lowndes County Commission, and the City of Valdosta. The public comment and agency review period lasted 30 days. The Georgia State Clearinghouse responded indicating that the State had no issues with the proposed project. No other comments were received. Comments received are provided in Appendix A.

## RESTRICTIONS/REQUIREMENTS

No restrictions, requirements, or permits would be required to implement the Proposed Action.

## CONCLUSION

The attached EA was prepared pursuant to Title 32 Code of Federal Regulations (CFR) Part 989, *Air Force Environmental Impact Analysis Process*, and U.S. Council on Environmental Quality regulations (40 CFR 1500-1508) for implementing the procedural requirements of the National Environmental Policy Act. The finding of the EA is that implementation of the Proposed Action would not have significant impacts on the human or natural environment. This finding of no significant impact is hereby issued, and no environmental impact statement is required.

BD 2

BILLY D. THOMPSON, Colonel, USAF  
Commander, 23d Wing

7 Jun 12

Date



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## **ACRONYMS, ABBREVIATIONS, AND SYMBOLS**

<b>AFB</b>	Air Force Base
<b>AGL</b>	above ground level
<b>ATC</b>	Air Traffic Control
<b>BASH</b>	bird-aircraft strike hazard
<b>CEQ</b>	Council on Environmental Quality
<b>CFR</b>	Code of Federal Regulations
<b>dB</b>	decibel
<b>DNL</b>	day-night average sound level
<b>EA</b>	Environmental Assessment
<b>EIS</b>	environmental impact statement
<b>IFR</b>	instrument flight rules
<b>L<sub>max</sub></b>	maximum sound level
<b>NEPA</b>	National Environmental Policy Act
<b>NM</b>	nautical miles
<b>OSHA</b>	Occupational Safety and Health Administration
<b>ROI</b>	region of influence
<b>USC</b>	U.S. Code
<b>USEPA</b>	U.S. Environmental Protection Agency
<b>VFR</b>	visual flight rules

# **1. PURPOSE AND NEED FOR ACTION**

## **1.1 INTRODUCTION**

The United States Air Force, Air Combat Command proposes to officially lower the Moody Air Force Base (AFB) A-10 aircraft visual flight rules (VFR) overhead flight pattern from 2,000 feet above ground level (AGL) to 1,500 feet AGL. The VFR overhead flight pattern altitude is the altitude at which aircraft operating under visual flight operations (as opposed to using instruments) typically use while maneuvering in the airfield environment to line up for runway approach.

## **1.2 LOCATION OF THE PROPOSED ACTION**

Moody AFB comprises a total of 10,992 acres in Lowndes and Lanier Counties in south-central Georgia (see Figure 1-1). Moody AFB property includes a main base area, which consists of approximately 5,118 acres and a 5,874 -acre parcel of land east of the main base, called Grand Bay Range. The main base portion, situated east of Parker Greene Highway (State Highway 125), includes the administrative, base support, aircraft operations, and maintenance areas, as well as the airfield.

Nearby cities include Valdosta, about 10 miles to the southwest, and Lakeland, about 6 miles northeast. Moody AFB is approximately 85 miles northeast of Tallahassee, Florida, and 120 miles northwest of Jacksonville, Florida. The closest major cities in Georgia are Macon, 150 miles north, and Atlanta, 220 miles north. Georgia State Highway 125 (Bemiss Road) is the primary access road to the main base. Highway 125 divides the main base into two functional units. The western unit includes the family housing area, golf course, and wastewater treatment plant facility. The eastern section includes administrative, base support, aircraft operations and maintenance areas, and the airfield with its two parallel north/south runways.

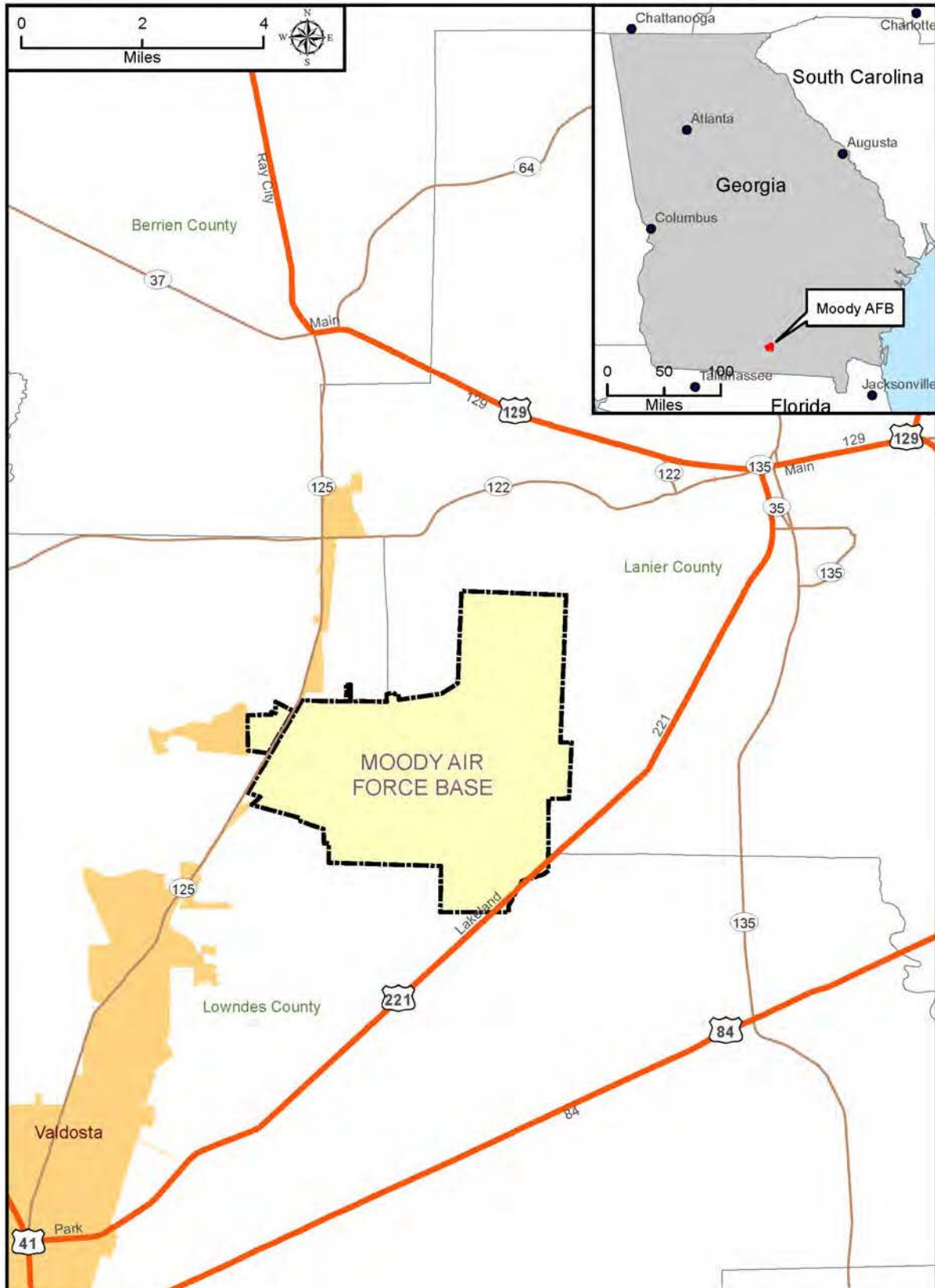


Figure 1-1. Location of Moody AFB and Proposed Action

### **1.3 PURPOSE AND NEED FOR THE ACTION**

The purpose of the Proposed Action is to officially lower the Moody AFB A-10 VFR overhead flight pattern from 2,000 feet AGL to 1,500 feet AGL. Currently, A-10 aircraft only utilize the 1,500-foot AGL VFR overhead flight pattern when weather does not permit a VFR overhead flight pattern of 2,000 feet. This occurs regularly, often due to changing weather and climate conditions inherent to southeastern Georgia. The proposed VFR overhead flight pattern change would occur in Class D airspace only (airspace immediately surrounding the Moody AFB airfield) and would not affect instrument flight rules (IFR) overhead flight patterns.

The need to officially adjust the VFR overhead flight pattern involves several factors. First, the Moody AFB A-10 aircraft VFR overhead flight pattern is set at a minimum of 2,000 feet AGL; a 1,500-foot AGL VFR overhead flight pattern is the standard VFR overhead flight pattern AGL requirement for the A-10 aircraft (U.S. Air Force, 2010). The 2,000-foot AGL VFR overhead flight pattern is associated with the previous Moody AFB training mission utilizing T-38 aircraft. When the Moody AFB mission changed from the T-38 to the A-10 the VFR overhead flight pattern was never officially changed to coincide with the A-10 standards. Additionally, the Moody AFB C-130 aircraft VFR overhead flight pattern is currently set to 1,500 feet AGL, which was established when the C-130 mission arrived at Moody AFB. Moody AFB needs to lower the current A-10 VFR overhead flight pattern from of 2,000 feet AGL to 1,500 feet AGL to meet standard A-10 overhead flight pattern technical order guidance and current mission needs. At a 2,000-foot AGL pattern altitude, there is a greater chance of stall or “getting behind the aircraft” as descent angle is increased, making descent more challenging than at lower altitudes.

Secondly, as discussed previously, weather and climate in southeast Georgia is such that a 2,000-feet AGL VFR overhead flight pattern is often not usable due to storms and heavy clouds that move into the area on a regular basis. VFR flights in Class D airspace must have 3 miles of visibility and fly an altitude at least 500 feet below, 1,000 feet above, and 2,000 feet laterally from clouds. With a 2,000-foot VFR overhead flight pattern, this can often prove difficult in areas subject to frequent storm conditions such as Moody AFB.

## **1.4 SCOPE OF THE ENVIRONMENTAL REVIEW**

This Environmental Assessment (EA) identifies, describes, and evaluates the potential environmental impacts that may result from implementing the Proposed Action as well as a no action alternative. As appropriate, the affected environment and environmental consequences may be described in terms of site-specific descriptions or regional overview. This document also identifies measures that would prevent or minimize environmental impacts.

The National Environmental Policy Act (NEPA) requires federal agencies to consider the environmental consequences of proposed actions in the decision-making process (42 U.S. Code [USC] 4321, et seq). The Council on Environmental Quality (CEQ) was established under NEPA, 42 USC 4342, et seq., to implement and oversee federal policy in this process. In 1978, the CEQ issued regulations implementing the NEPA process under Title 40, Code of Federal Regulations (CFR), Parts 1500–1508. The CEQ regulations require that the federal agency considering an action evaluate or assess the potential consequences of the action or alternatives to the action, which may result in the need for an EA or environmental impact statement (EIS). Under 40 CFR:

- An EA must briefly provide sufficient evidence and analysis to determine whether a finding of no significant impact or EIS should be prepared.
- An EA must facilitate the preparation of an EIS if required.

The proposed activities addressed in this document constitute a federal action and, therefore, must be assessed in accordance with NEPA. To comply with NEPA, as well as other pertinent environmental requirements, the decision-making process for the Proposed Action must include the development of an EA to address the environmental issues related to the proposed activities. The Air Force Environmental Impact Analysis Process is accomplished via procedures set forth in CEQ regulations and 32 CFR Part 989.

### **1.4.1 Public/Agency Review**

The Air Force published a public notice in the *Valdosta Daily Times* on February 19, 2012, inviting the public to review and comment on the EA (available at the South Georgia Regional Library in Valdosta, Georgia). The Air Force also provided the following agencies copies of the EA for review and comment: Georgia State



Clearinghouse, Lowndes County Commission, and the City of Valdosta. The public comment and agency review period lasted 30 days. The Georgia State Clearinghouse responded indicating that the State had no issues with the proposed project. No other comments were received. Comments received are provided in Appendix A.

Based on the scope of the Proposed Action, the following environmental features were identified for analysis in the EA: noise, safety, airspace management, and environmental justice.

#### **1.4.2 Issues Not Carried Forward for Detailed Analyses**

Based on the scope of the Proposed Action, issues with minimal or no impacts were identified through a preliminary screening process. The following describes those issues not carried forward for detailed analyses, along with the rationale for their elimination.

***Air quality:*** There would be no net change in aircraft operations at Moody (number of sorties, changes in aircraft, etc.). The Proposed Action would not result in any change to air emissions associated with Moody AFB or the surrounding community.

***Water resources:*** The scope of the Proposed Action is limited to airspace. Therefore, the Proposed Action would not involve any activities that would interact with the ground surface and, thus, would not impact water resources in any way.

***Biological resources:*** The scope of the Proposed Action is limited to airspace. The Proposed Action would not involve any activities that would interact with plants. However, airplanes may impact bird species, including sensitive species such as migratory birds and threatened and endangered birds. The primary impact to such species would result from issues associated with bird-aircraft strike hazards (BASH) and is discussed in Section 3.2, Safety. BASH incidents involving sensitive bird species accounted for only 1 percent of total incidents over a seven-year period (2004 through 2010), with all but one of these incidents occurring at or below 1,000 feet AGL. It is unlikely that decreasing the VFR overhead flight pattern would significantly increase the potential for sensitive bird species BASH incidents given that most of these incidents occur at or below 1,000 feet AGL; the Proposed Action would lower the flight pattern altitude to 1,500 feet, which is a flight pattern altitude used regularly by other

aircraft at Moody AFB. Additionally, there would only be a small increase in the size of area affected by noise resulting from the change. As a result, it is expected that bird species would continue to utilize the area as they currently do and the Air Force does not expect any significant impacts to wildlife and sensitive bird species as a result of the Proposed Action.

***Soils:*** The scope of the Proposed Action is limited to airspace. Therefore, the Proposed Action would not involve any activities that would interact with the ground surface and, thus, would not impact soil resources in any way.

***Utilities:*** There would be no new utility connections or increases in utility use associated with the Proposed Action and no impact to utility resources at Moody AFB or the surrounding community.

***Cultural resources:*** The scope of the Proposed Action is limited to airspace surrounding the Moody AFB airfield and would not involve activities that would disturb historic structures, archaeological sites, or tribal resources. As a result, no impacts to cultural resources are associated with implementing the Proposed Action.

***Land use:*** The Proposed Action does not involve any land utilization or changes in land use designations. Additionally, lowering the VFR overhead flight pattern altitude would not result in any changes to accident potential zones or land use compatibility issues associated with noise. Therefore, the Air Force has not identified any impacts to land uses within the Proposed Action area.

***Hazardous materials and waste:*** The Proposed Action would not involve an increase in the utilization of hazardous materials or the introduction of different hazardous materials other than those currently utilized for A-10 operational activities at Moody AFB. Additionally, the Proposed Action would not result in any increase in the generation of hazardous waste or the generation of new hazardous wastes. The Proposed Action would also not affect Environmental Restoration Program sites at Moody AFB.

## **1.5 ORGANIZATION OF THE DOCUMENT**

The EA was developed per the requirements established by CEQ regulations (40 CFR 1500–1508). This document consists of the following chapters:

1. Purpose and Need for Action
2. Description of Proposed Action and Alternatives
3. Affected Environment
4. Environmental Consequences
5. Cumulative Impacts
6. Special Operating Procedures and Mitigations
7. Persons and Agencies Contacted
8. List of Preparers
9. References

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## **2. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

### **2.1 INTRODUCTION**

This chapter describes the Proposed Action, the alternatives that the Air Force considered but did not carry forward, and the No Action Alternative. The potential environmental impacts of the Proposed Action and alternatives are summarized at the end of this chapter.

### **2.2 PROPOSED ACTION**

The Proposed Action involves lowering the A-10 aircraft VFR overhead flight pattern altitude from 2,000 feet AGL to 1,500 feet AGL. As discussed previously, the current A-10 VFR overhead flight pattern altitude is set at 2,000 feet AGL. Figure 2-1 shows the location of the affected flight track. Flight tracks shown in Figure 2-1 are representative of actual flight tracks flown, as reported by pilots. Ground tracks vary depending on winds and other factors. Only segments of the flight tracks shown (mainly those closest to the base) would be affected by the pattern altitude change.

Aircraft operate under either IFR or VFR. Visual flight rules allow a pilot to operate an aircraft in weather conditions generally clear enough so that the pilot can see where the aircraft is going and ensure safe separation from other aircraft. When weather conditions do not meet established VFR overhead flight pattern minimums, pilots are required to use IFR overhead flight patterns and rely on air traffic control (ATC) to provide separation from other aircraft. When minimum separation distances are maintained, the risk of collisions is minimized and accidents due to aircraft wake turbulence are prevented. Wake turbulence is the trail of turbulent air left behind any moving aircraft and is particularly severe for large aircraft.

Under the Proposed Action, only Class D airspace would be affected, so there would be no change to IFR overhead flight patterns. Class D airspace is generally that airspace from the surface to 2,500 feet above the airfield elevation. VFR overhead flights in Class D airspace must have 3 miles of visibility and fly an altitude at least 500 feet below, 1,000 feet above, and 2,000 feet laterally from clouds.

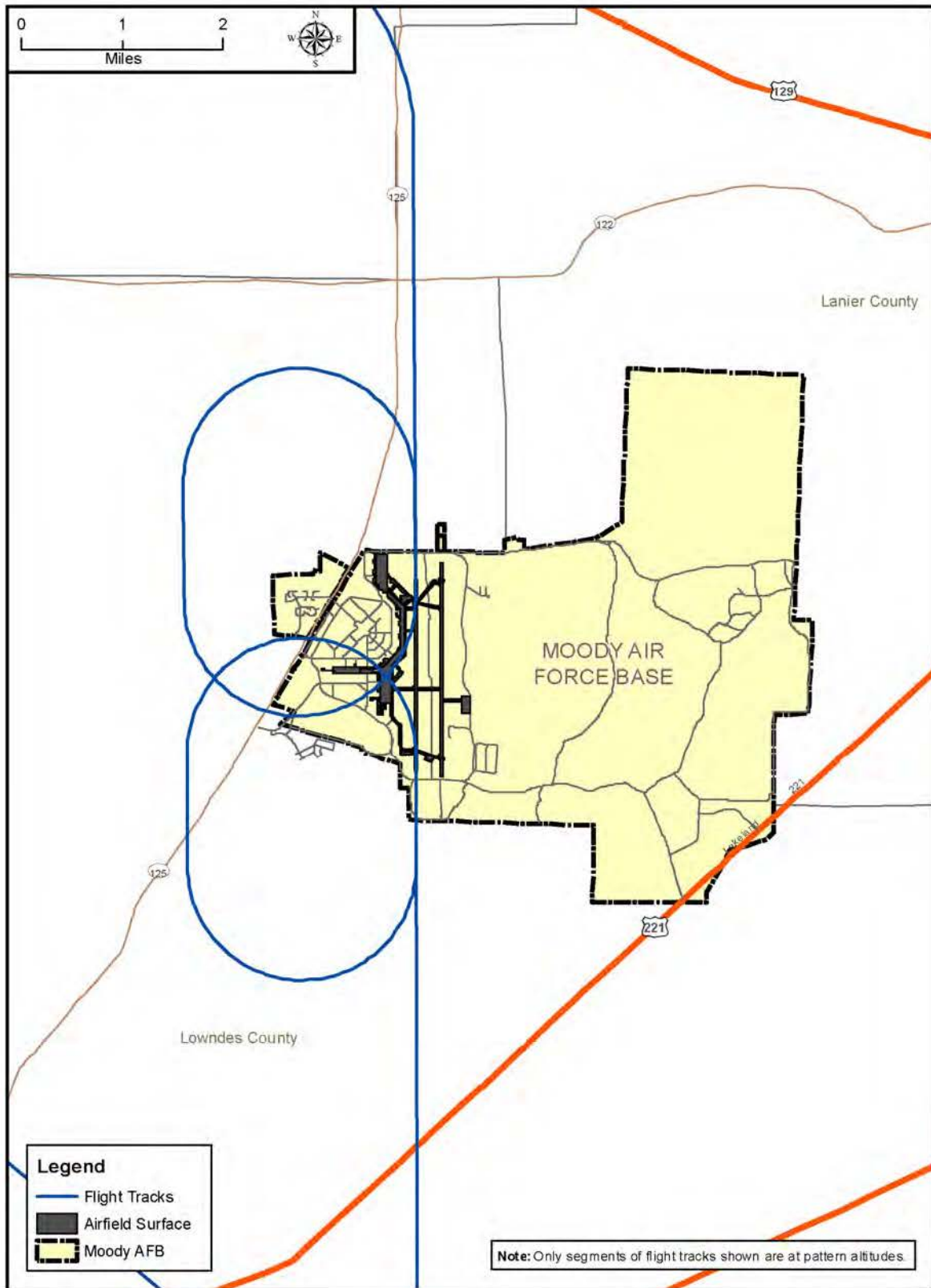


Figure 2-1. Example Flight Tracks Affected by the Proposed Action

With a 2,000-foot VFR overhead flight pattern, this can often prove difficult in areas subject to frequent storm conditions such as Moody AFB, thus, the need to lower the A-10 VFR overhead flight pattern. The revised procedures would set the standard A-10 pattern altitude to 1,500 feet AGL but would retain the flexibility to allow altitude to be shifted back up to 2,200 feet AGL temporarily if need be.

## **2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED**

Other pattern altitudes were considered but deemed not viable:

- Lowering to 1,000 feet AGL was considered but was deemed too low for fighter/attack type aircraft per AF policy.
- Lowering to 1,700 feet AGL was considered, but only increments of 500 feet AGL are generally used by ATC. Therefore 1,700 feet would be nonstandard and potentially problematic for pilots not used to that procedure.

## **2.4 NO ACTION ALTERNATIVE**

Under the No Action Alternative, the Air Force would not officially lower the A-10 VFR overhead flight pattern altitude and would maintain a 2,000-foot AGL VFR overhead flight pattern altitude. Pattern altitude would continue to be temporarily set to 1,500 feet AGL only as necessary to accommodate weather conditions. This would not meet standard A-10 technical order guidance and would result in continued coordination requirements with ATC when weather disallows VFR overhead flight pattern operations at 2,000 feet AGL.

## **2.5 IMPACT SUMMARY**

Table 2-1 summarizes the impacts associated with the Proposed Action and No Action Alternative.

Table 2-1. Alternative Impact Summary and Comparison

Resource / Issue Area	Alternatives	
	Proposed Action	No Action
Noise	Noise levels near the installation would increase slightly as a result of A-10 aircraft operating regularly at the proposed lower pattern altitude. An additional 59 acres of land would be affected by noise levels at or exceeding 65 dB DNL and noise levels at representative noise-sensitive receptors would increase by 1 dB DNL or less. Noise effects would not be expected to be significant.	The No Action Alternative would not result in any additional impacts to the environment beyond the scope of normal conditions and influences within the region of influence.
Safety	No significant increase in impacts related to aircraft mishaps or BASH potential is expected. The 1,500-foot AGL VFR overhead flight pattern altitude is standard, and has been used on an as-needed basis with no additional flight safety issues. Lowering the A-10 VFR overhead flight pattern altitude may slightly increase the potential for BASH risks, but increased risk potential would be expected to be minimal given current Moody AFB BASH program requirements.	
Airspace Management	Current air traffic control procedures, once modified to lower A-10 VFR overhead flight pattern altitude, would continue to ensure minimum aircraft separation for aircraft operating in Moody AFB airspace. The proposed change would not be expected to result in reduced pattern capacity. Lowering the A-10 VFR overhead flight pattern altitude would not be expected to result in any significant Airspace Management issues.	
Environmental Justice	No low-income or minority populations would be adversely affected by the Proposed Action, and no environmental justice impacts would occur.	

dB = decibels; DNL = day-night average sound level



### **3. AFFECTED ENVIRONMENT**

This chapter describes the environmental conditions potentially affected by the Proposed Action. It provides information to serve as a baseline from which to identify and evaluate environmental changes likely to result from implementation of the Proposed Action. Baseline conditions represent current conditions. The description of potential environmental impacts of implementing the Proposed Action or its alternative is in Chapter 4.

In compliance with NEPA, CEQ guidelines, and 32 CFR Part 989, et seq., the description of the affected environment focuses on those resources and conditions potentially subject to impacts. These resources and conditions include noise, safety, air space management, and environmental justice.

#### **3.1 NOISE**

##### **3.1.1 Definition of the Resource**

Noise is considered to be unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. It may be intermittent or continuous, steady or impulsive. It may be stationary or transient. Stationary sources are normally related to specific land uses (e.g., housing tracts or industrial plants). Transient noise sources move through the environment, either along relatively established paths (e.g., highways, railroads, and aircraft flight tracks around airports) or randomly. There is wide diversity in responses to noise that not only vary according to the type of noise and the characteristics of the sound source but also according to the sensitivity and expectations of the receptor, the time of day, and the distance between the noise source (e.g., an aircraft) and the receptor (e.g., a person or animal).

The physical characteristics of noise, or sound, include its intensity, frequency, and duration. Sound is created by acoustic energy, which produces minute pressure waves that travel through a medium, like air, and are sensed by the eardrum. This may be likened to the ripples in water that would be produced when a stone is dropped into it. As the acoustic energy increases, the intensity or amplitude of these pressure waves increase, and the ear senses louder noise. The unit used to measure the intensity of sound is the decibel (dB). Sound intensity varies widely (e.g., from a soft whisper to a

jet engine), and it is measured on a logarithmic scale to accommodate this wide range. The logarithm, and its use, is nothing more than a mathematical tool that simplifies dealing with very large and very small numbers. For example, the logarithm of the number 1,000,000 is 6, and the logarithm of the number 0.000001 is -6 (minus 6). As a basis for comparison, at distances of about 3 feet, normal human speech ranges from 63 to 65 dB, loud kitchen appliances (e.g., blender) range from about 83 to 88 dB, and rock bands may approach 110 dB.

The frequency of sound is measured in cycles per second, or hertz (Hz). This measurement reflects the number of times per second the air vibrates from the acoustic energy. Low-frequency sounds are heard as rumbles or roars, and high-frequency sounds are heard as screeches. Sound measurement is further refined through the use of “A-weighting.” The normal human ear can detect sounds that range in frequency from about 20 Hz to 15,000 Hz. However, not all sounds in this range are heard equally well. Therefore, through internal electronic circuitry, some sound meters are calibrated to emphasize frequencies between 1,000 and 4,000 Hz. The human ear is most sensitive to frequencies in this range, and sounds measured with these instruments are termed “A-weighted.” Throughout this document, dB levels can be assumed to be A-weighted. The duration of a noise event and the number of times noise events occur are also important considerations in assessing noise impacts. Examples of typical A-weighted sound levels of common sounds are shown in Figure 3-1.

The word “metric” is used to describe a standard of measurement. As used in environmental noise analysis, there are many different types of noise metrics. Each metric has a different physical meaning or interpretation, and each metric was developed by researchers attempting to represent the effects of environmental noise. The metrics supporting the assessment of noise from aircraft operations and other activities evaluated in this document are the maximum sound level ( $L_{\max}$ ) and the day-night average sound level (DNL).

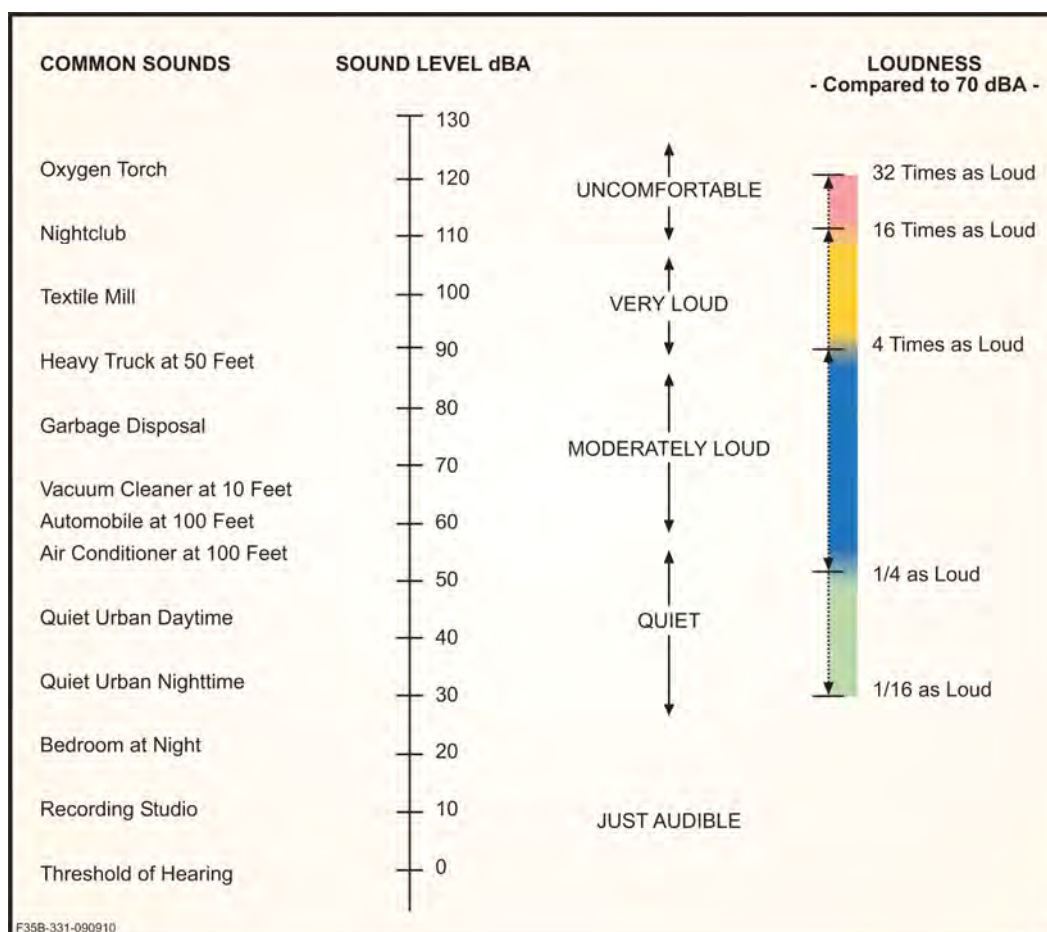


Figure 3-1. Typical A-Weighted Sound Levels of Common Sounds

### Maximum Sound Level

The  $L_{\max}$  is the highest sound level measured during a noise event. In many situations, noise levels vary over time for one reason or another. In the case of an aircraft overflight, the noise level varies as the aircraft moves closer to or farther away from the observer on the ground. In the case of construction equipment, noise level varies based on the mode in which the piece of equipment is operating (e.g., full-throttle, idle).  $L_{\max}$  is a useful metric for judging a noise event's interference with conversation, sleep, or other common activities.

### Day-Night Average Sound Level

The DNL metric sums the individual noise events and averages the resulting level over a specified length of time. Thus, it is a composite metric that considers the maximum noise levels, the duration of the events, the number of events that occur, and the time of day during which they occur. This metric adds 10 dB to those events that

occur between 10:00 p.m. and 7:00 a.m. to account for the increased intrusiveness of noise events that occur at night when ambient noise levels are normally lower than during the day. Ignoring the night-time penalty, DNL may be thought of as the continuous or cumulative A-weighted sound level that would be present if all of the variations in sound level occurring over the given time period were smoothed out so as to contain the same total sound energy.

It is fully recognized that the DNL metric does not provide specific information on the number of noise events or the specific individual sound levels that occur. For example, a DNL of 65 dB could result from a very few noisy events or a large number of quieter events. Although it does not represent the sound level heard at any one particular time, DNL does accurately represent the total sound exposure at a location, and social surveys have found the DNL metric to be the best predictor of community annoyance resulting from transportation noise. Its use is endorsed by the scientific community and several governmental agencies (U.S. Environmental Protection Agency [USEPA], 1974; Federal Interagency Commission on Urban Noise, 1980; Federal Interagency Commission on Noise, 1992).

Furthermore, ambient background noise is not considered in the noise calculations that are presented below. There are two reasons for this. First ambient background noise, even in wilderness areas, varies widely depending on location and other conditions. In general, however, ambient noise levels in a typical low-density residential area can be expected to be approximately 51 dB and noise levels in a typical farm field can be expected to be approximately 44 dB (USEPA, 1974). In calculating noise levels, louder sounds dominate the calculations and, in general, aircraft and other transportation-related noise would be expected to be the dominant noise sources characterizing the acoustic conditions in the region of influence (ROI). Therefore, it is reasonable to assume that ambient background noise in the project's ROI would have little or no effect on the calculated DNL.

### **3.1.2 Analysis Methodology**

Noise levels under the Proposed Action were compared with noise levels under baseline conditions to assess impacts. Noise levels in the vicinity of Moody AFB were calculated using the computer program NOISEMAP, version 7.3. NOISEMAP has undergone extensive validation against field measurements of noise level and has been proven to be highly accurate.

Based on numerous sociological surveys and recommendations of federal interagency councils, the most common benchmark referred to is 65 dB DNL. This threshold is often used to determine residential land use compatibility around airports, highways, or other transportation corridors. Two other average noise levels are also useful:

- DNL of 55 dB was identified by the USEPA as a level “... requisite to protect the public health and welfare with an adequate margin of safety” (USEPA, 1974). Noise may be heard, but there is no risk to public health or welfare.
- A DNL of 75 dB is a threshold above which effects other than annoyance may occur. It is 10 to 15 dB below levels at which hearing damage is a known risk (Occupational Safety and Health Administration [OSHA], 1983). However, it is also a level above which some adverse health effects cannot be categorically discounted.

Public annoyance is the most common impact associated with exposure to elevated noise levels. When subjected to DNL of 65 dB, approximately 12 percent of persons will be “highly annoyed” by the noise. At levels below 55 dB, the percentage of annoyance is correspondingly lower (less than 3 percent). The percentage of people annoyed by noise never drops to zero (some people are always annoyed), but at levels below 55 dB it is reduced enough to be essentially negligible. Noise impacts would be expected to be perceived as significant if noise-sensitive areas were to experience a substantial increase in sound levels. Noise impacts would also be expected to be considered significant if noise over large quantities of land were to increase to greater than 65 dB DNL.

### **3.1.3 Existing Conditions**

The dominant noise source in the immediate vicinity of Moody AFB is aircraft operations and, particularly the operations of the A-10, C-130H, and H-60 aircraft based at Moody AFB. Noise levels ( $L_{max}$ ) associated with individual overflights by these aircraft at various altitudes are listed in Table 3-1. The noise levels listed in Table 3-1 were calculated for the aircraft operating in configurations typically used during pattern work (i.e., maneuvering the aircraft prior to lining up for final descent to land).

**Table 3-1. Direct Overflight Noise Levels ( $L_{max}$ ) for Aircraft at Moody AFB**

Aircraft	Aircraft Configuration	Power	Airspeed (kts)	Feet Above Ground Level				
				300	500	1,000	1,500	2,000
A-10	Pattern	83% NC	160	88	88	79	73	68
C-130H	Pattern	600 C TIT	170	95	90	83	79	75
UH-60A	Pattern	LFO load 100 kts	100	88	83	76	72	69

NC = core engine speed; NF = fan speed; C TIT = turbine inlet temperature in Celsius; LFO load kts = level flight overhead carrying a load and fling at 100 knots; kts = nautical miles per hour

1. Used SELCALC program for fixed-wing aircraft noise calculations and assumed median acoustical conditions for local climate (68° Fahrenheit, 70 percent humidity).
2. Representative aircraft configurations while in the Moody AFB traffic pattern are based on information reported by Moody AFB pilots.

Information regarding representative baseline flying procedures on an average busy flying day at Moody AFB has been collected through extensive pilot and aircraft maintainer interviews. Data collected include information on where and how aircraft typically fly as well as information regarding maintenance engine runs. This information was then entered into the program NOISEMAP, version 7.3 to estimate noise levels. NOISEMAP references a database of measured noise levels to calculate noise levels. Baseline noise levels (dB DNL) at Moody AFB are shown in Figure 3-2 as noise contours. The noise contours are lines of equal noise level and are plotted in increments of 5 dB, ranging from 65 dB to 85 dB. The number of acres affected by each noise level increment are listed in Table 3-2. Approximately 2,500 acres of land not located on Moody AFB are affected by noise levels exceeding 65 dB DNL under baseline conditions. The area affected by noise greater than 65 dB DNL includes areas on Grand Bay Range over which aircraft fly during air-to-ground munitions employment training.

**Table 3-2. Acres Affected by Noise Level Greater Than 65 dB DNL**

Noise Contour Interval (dB DNL)	Baseline Contours		
	Total	On-Base	Off-Base
65 – 69	3,193	1,453	1,740
70 – 74	1,565	963	602
75 – 79	753	597	155
80 – 84	490	488	2
≥ 85	78	78	0
Total	6,079	3,579	2,499

Source: NOISEMAP, version 7.3

dB = decibels; DNL = day-night average sound level



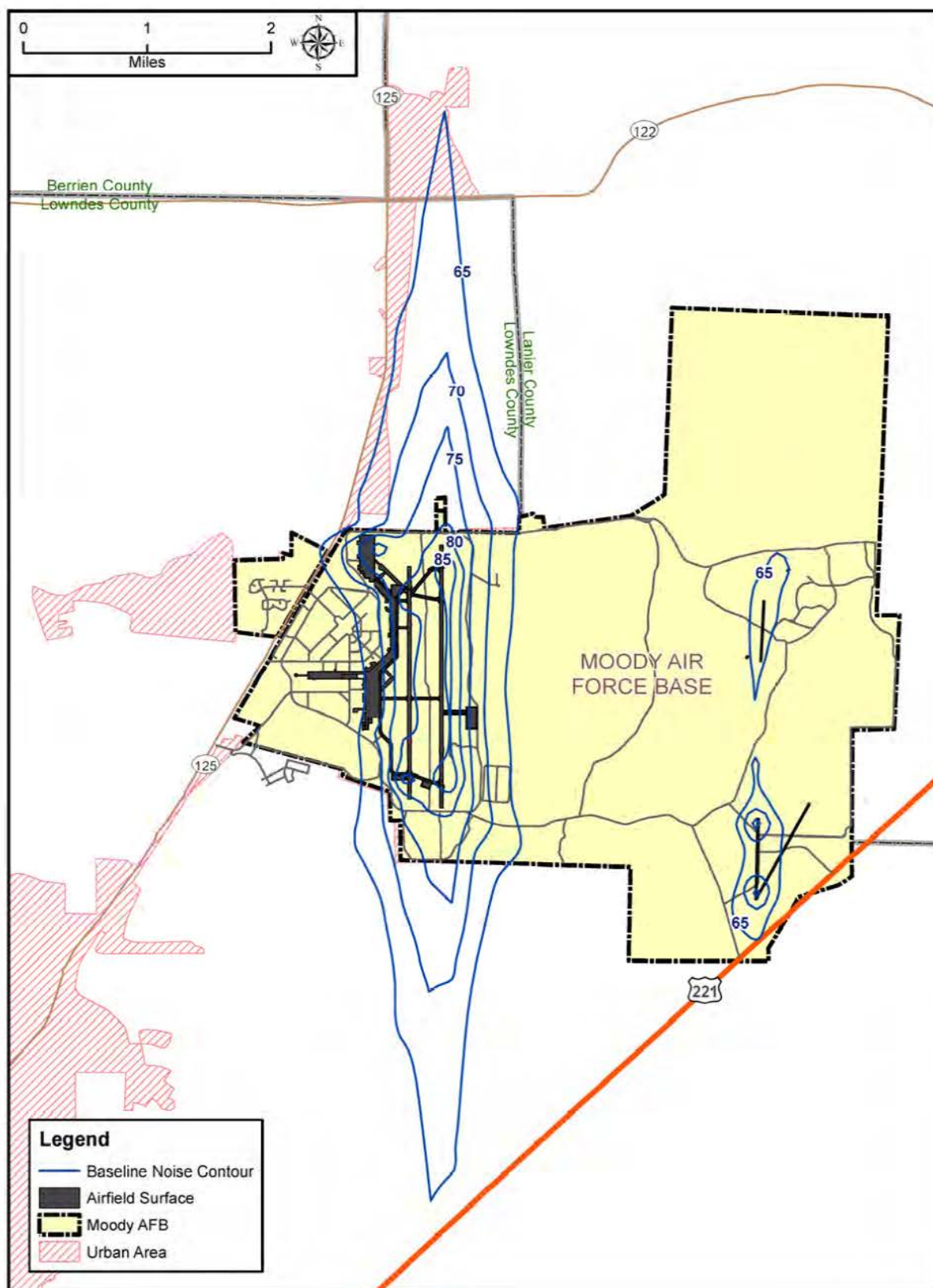


Figure 3-2. Baseline Noise Contours at Moody AFB

Several locations near Moody AFB were selected for additional noise analysis. The locations include residential areas and the Moody AFB Child Development Center. These types of locations are relatively noise-sensitive. However, it should be noted that the locations selected are by no means the only locations near Moody AFB that could be considered to be noise sensitive. Noise levels (dB DNL) at the representative noise-sensitive locations are listed in Table 3-3.

**Table 3-3. Specific Point Noise Exposure Under Baseline Conditions**

Location ID#	Location Description	Baseline DNL (dB)
1	Residential Area #1	58
2	Residential Area #2	53
3	Residential Area #3	70
4	Residential Area #4	70
5	Child Development Center	63

Source: NOISEMAP, version 7.3

dB = decibels; DNL = day-night average sound level

## 3.2 SAFETY

### 3.2.1 Definition of the Resource

This section addresses flight safety associated with operations conducted on Moody AFB. Potential aircraft accidents may occur as a result of mid-air collisions, collisions with man-made structures or terrain, weather-related accidents, mechanical failure, pilot error, and BASH.

### 3.2.2 Analysis Methodology

Conditions under the Proposed Action were compared with baseline conditions to assess impacts. Impacts would be considered significant if flight mishaps and/or bird strike potential increased.

### 3.2.3 Existing Conditions

The Air Force defines four categories of aircraft mishaps: Classes A, B, and C and “high accident potential.” Class A mishaps result in loss of life, permanent total disability, a total cost in excess of \$2 million, destruction of an aircraft, or damage to an aircraft beyond economical repair. Class B mishaps result in total costs of more than



\$500,000, but less than \$2,000,000, or permanent partial disability, but they do not result in fatalities. Class C mishaps involve costs of more than \$50,000, but less than \$500,000, or a loss of worker productivity of more than 8 hours. Mishaps classified as High accident potential represent minor incidents not meeting any of the criteria for Classes A, B, or C (U.S. Air Force, 2011). This section focuses on Class A mishaps because of their potential to affect private property or the public.

The Air Force calculates Class A mishap rates per 100,000 flying hours for each type of aircraft in the inventory. The Class A mishap rate per 100,000 flying can be used to compute a statistical projection of anticipated time between mishaps. Over the close to 40 years the A-10 has been in the inventory, 102 aircraft have been destroyed in noncombat mishaps. The lifetime Class A mishap rate is 2.12. During the last 10 years (fiscal year 2001 to 2010), there have been an average of 1.1 mishaps and a mishap rate of 1.01 (U.S. Air Force, 2011). Since the A-10 has been at Moody AFB, there have been three Class A mishaps. Two mishaps involved engine failures and one occurred when an A-10 ran off the end of the runway and crashed.

Another major concern with regard to flight safety is BASH. Aircraft may encounter birds at altitudes up to 30,000 feet. However, most birds fly close to the ground; over half of all reported bird strikes occur below 500 feet AGL, and over 75 percent occur below 2,000 feet AGL. Of these strikes, approximately 30 percent of bird strikes happen in the airport environment and almost 55 percent occur during low-altitude flight training (U.S. Air Force, 2011). In addition, aircraft face collision dangers from other wildlife, such as deer, during takeoff or landing.

A BASH exists at Moody AFB and in its vicinity due primarily to local wildlife populations, resident birds, and migratory bird species. The 23 WG 91-212, *Bird Aircraft Strike Hazard (BASH) Plan*, has been developed by the base to control and minimize the potential collision of aircraft and wildlife in and around the immediate vicinity of Moody AFB airfields and training areas. This plan establishes procedures to minimize BASH. No single solution exists to Moody's BASH situation, and a variety of techniques and organizations are involved in the control program (U.S. Air Force, 2009).

During fiscal year 2010, there were a total of 83 strikes between aircraft and wildlife at Moody AFB for a total bird strike rate of 10.1 per 1,000 sorties. Out of this number, six were considered to be damaging strikes. So far, in fiscal year 2011, there have been 56 total strikes at a rate of 10.5 per 1,000 sorties. Out of this number, eight

have been damaging strikes (Griffin, 2011). Moody AFB has identified nine species of sensitive birds in the vicinity of the base (U.S. Air Force, 2008). During a seven-year period (2004–2011) 7 of 672 BASH incidents were known to involve sensitive bird species, with all but 1 occurring at an altitude at or below 1,000 feet (Griffin, 2011).

### **3.3 AIRSPACE MANAGEMENT**

#### **3.3.1 Definition of the Resource**

Airspace management is defined as the direction, control, and handling of flight operations in the “navigable airspace” that overlies the geopolitical borders of the United States and its territories. “Navigable airspace” is airspace above the minimum altitudes of flight prescribed by regulations under USC Title 49, Subtitle VII, Part A, and includes airspace needed to ensure safety in the takeoff and landing of aircraft (49 USC § 40102). Congress has charged the Federal Aviation Administration (FAA) with responsibility for developing plans and policy for the use of the navigable airspace and assigning by regulation or order, the use of the airspace necessary to ensure the safety of aircraft and its efficient use (49 USC § 40103(b); FAA Joint Order 7400.2H). Airspace management considers how airspace is designated, used, and administered to best accommodate the individual and common needs of military, commercial, and general aviation.

Pursuant to its mission to ensure safe and efficient use of navigable airspace, the FAA has defined several airspace categories to accommodate varying types and intensities of flight activity. Controlled airspace is airspace of defined dimensions within which ATC service is provided in accordance with the airspace classification (FAA, 2011). Controlled airspace is categorized into five separate classes, classes A through E, each with its own set of rules regarding how operations are to be conducted. Uncontrolled airspace is designated Class G airspace, and exists in volumes of airspace not otherwise designated.

Aircraft operate under either instrument flight rules (IFR) or VFR. VFR are a set of regulations that allow a pilot to operate an aircraft in weather conditions generally clear enough for the pilot to see where the aircraft is going. When weather conditions do not meet established VFR minimums, pilots are required to use IFR and rely upon ATC to provide separation from other aircraft. When minimum separation distances

are maintained, the risk of collisions is minimized and accidents due to aircraft wake turbulence are prevented. (Wake turbulence is the trail of turbulent air left behind any moving aircraft and is particularly severe for large aircraft.) In general, when aircraft are near, the airport separation is maintained at not less than 500 feet vertically and 1.5 nautical miles (NM) horizontally (FAA Joint Order 7110.65T).

Restricted areas are typically designated to ensure that nonparticipating aircraft are kept separate from hazardous activities, such as firing of munitions (FAA, 2011). However, at times when restricted area airspace is not designated as “active” nonparticipating aircraft may be permitted to traverse the area.

### **3.3.2 Analysis Methodology**

Conditions under each alternative were compared with baseline conditions to assess impacts. Impacts would be considered significant if safety of flight would be lost for any aircraft at any point in time. Impacts would also be considered significant if substantial delays for ongoing air traffic would be incurred.

### **3.3.3 Existing Conditions**

The affected area includes the airspace surrounding Moody AFB. The airport is immediately surrounded by a cylinder of airspace designated as “Class D” that extends to a radius of 5 NM from the surface to 2,700 feet AGL. Prior to entering Class D airspace, pilots must establish and maintain two-way radio communications with the appropriate ATC facility. ATC monitors flying operations and provides instructions to all pilots operating under IFR such that minimum aircraft separation distance is maintained (FAA, 2011). Class E airspace is generally used as an area for transition of aircraft to and from terminal airspace. Class E airspace associated with Moody AFB extends to a radius of 7 NM with floor altitude of 700 feet AGL and is also contiguous with Class E airspace associated with Berrien County Airport and the Valdosta Regional Airport. Restricted area R-3008 is located immediately east of Moody AFB. When the restricted area is designated as active, nonparticipating flights are not permitted to enter.

Moody AFB handles an average of 540 airfield operations per average busy flying day (i.e., Monday through Friday). A-10, HC-130, and HH-60 aircraft are based at Moody AFB, but the base is also used by numerous types of transient aircraft. The

airfield includes two parallel active runways that are oriented along a north-south axis as well as a helipad located immediately to the west of the runways.

Aircraft maneuvering in the installation airspace but prior to lining up for final approach to land on a runway can be said to be in the installation traffic pattern. Pattern altitude is the established standard altitude at which these maneuvers are conducted prior to initiating descent to the runway. Pattern altitude is published in the installation in-flight guide and is often specified by aircraft type (e.g., A-10) and maneuver type (i.e., VFR or IFR). Currently, pattern altitude for A-10 aircraft operating under VFR is 1,500 feet AGL (Moody AFB, n.d.). Under baseline conditions, C-130 VFR pattern altitude is 1,500 feet AGL and H-60 aircraft VFR pattern altitudes is 500 feet AGL (Wells, 2011). When VFR visibility minimums are not met at 2,000 feet AGL due to low clouds, but are met at 1,500 feet AGL, A-10 VFR pattern altitude may be temporarily reset by ATC to 1,500 feet AGL. It is estimated that approximately 20 percent of total A-10 operations are conducted at times when the A-10 VFR pattern altitude has been lowered to 1,500 feet AGL (Wells, 2011).

### **3.4 ENVIRONMENTAL JUSTICE**

#### **3.4.1 Definition of the Resource**

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, directs federal agencies to address environmental and human health conditions in minority and low-income communities. The purpose of environmental justice studies is to determine whether or not actions of federal agencies disproportionately impact the human health and environmental conditions in potentially disadvantaged communities

For purposes of this analysis, minority and low-income populations are defined as follows:

- Minority population: Persons of Hispanic origin of any race, Blacks, American Indians, Eskimos, Aleuts, Asians, or Pacific Islanders
- Low-income population: Persons living below the poverty level, based on an average poverty threshold for a family of four in 2000 of \$17,603 in annual income

Estimates of these population categories were developed based on data from the U.S. Census. The ROI for environmental justice includes Lanier, Lowndes, and Berrien Counties in Georgia.

### **3.4.2 Analysis Methodology**

Disadvantaged groups within the vicinity of Moody AFB, including minority and low-income populations, do not represent a disproportionate segment of the population when compared with the region and the state. Nevertheless, potential health and safety factors associated with the Proposed Action were analyzed to determine whether any disproportionately high or adverse human health or environmental effects could occur. Three criteria must be met for impacts to minority and low income communities to be considered significant: 1) there must be one or more populations within the ROI, 2) there must be adverse (or significant) impacts from the proposed action, and 3) the environmental justice populations within the ROI must bear a disproportionate burden of those adverse impacts. If any of these criteria are not met, then impacts with respect to environmental justice would not be significant.

### **3.4.3 Existing Conditions**

Disadvantaged socioeconomic groups within the ROI are specifically considered in order to assess the potential for disproportionate occurrence of impacts. Based on 2010 Census data, Berrien County Tract 9706 is 23.72% below the poverty level and Lanier County Tract 9502 is 22.14% below the poverty level. Therefore, the ROI weighted average is 15.56% below the poverty level; these census tracts are shown on Figure 3-3. Minority areas are located northeast of the base along the Lowndes and Lanier County boundary, and small areas of minority population are found adjacent to Highway 125 in Berrien County. Flight tracks shown in Figure 3-3 are representative of actual flight tracks flown, as reported by pilots. Ground tracks vary depending on winds and other factors. Only segments of the flight tracks shown (mainly those closest to the base) would be affected by the pattern altitude change.



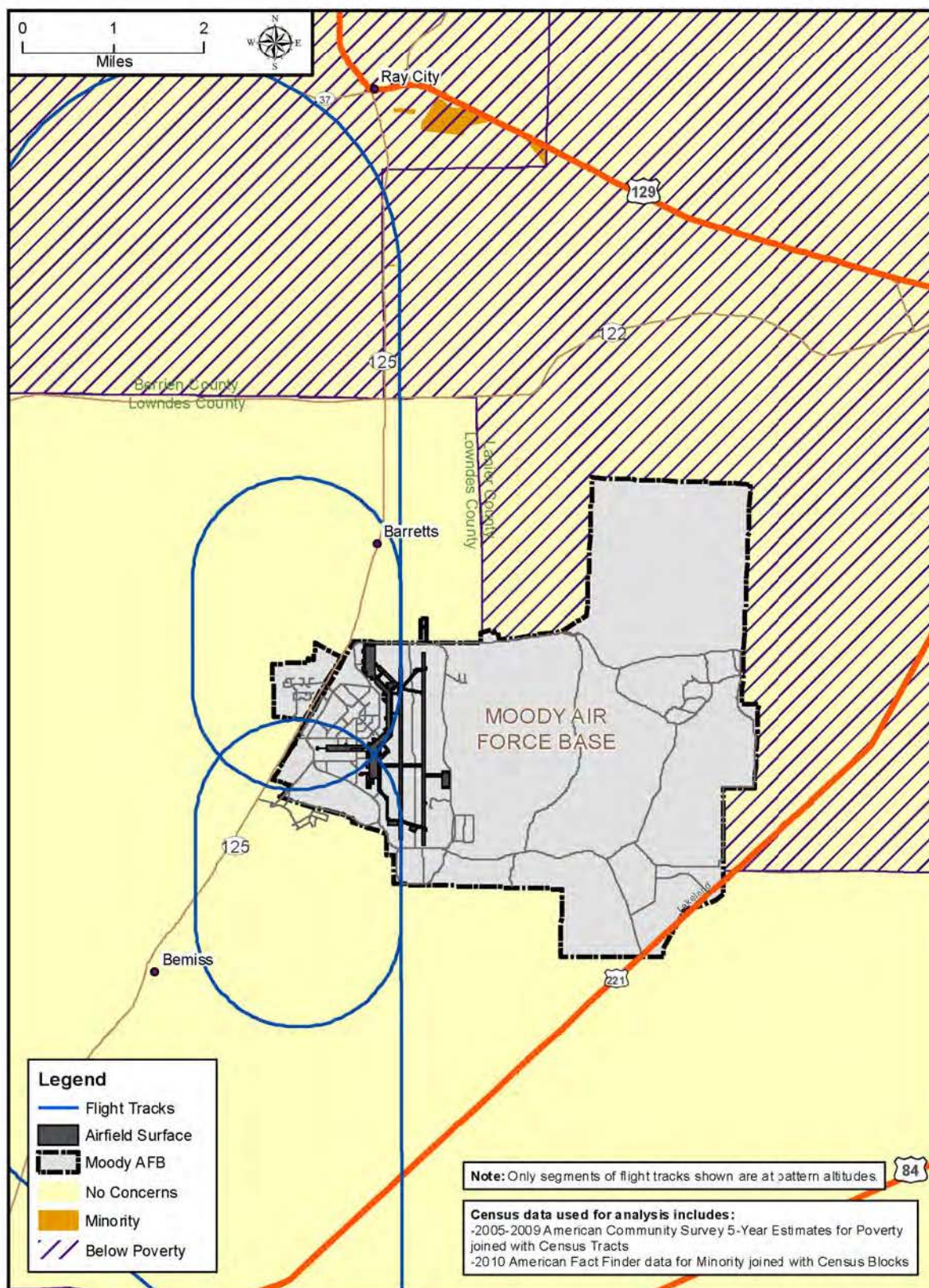


Figure 3-3. Minority and Low-Income Populations in the Vicinity of Moody AFB

## **4. ENVIRONMENTAL CONSEQUENCES**

This chapter assesses potential environmental consequences associated with the Proposed Action and the No Action Alternative. Potential impacts are addressed in the context of the scope of the Proposed Action as described in Chapter 2 and in consideration of the potentially affected environment, as characterized in Chapter 3.

### **4.1 NOISE**

#### **4.1.1 Proposed Action**

Under the Proposed Action, the standard A-10 VFR closed overhead flight pattern would be reduced from 2,000 feet AGL to 1,500 feet AGL. When weather does not permit VFR overhead flight at 2,000 feet AGL, but does permit VFR overhead flight at 1,500 feet AGL, Moody AFB ATC temporarily lowers VFR overhead flight pattern altitude to 1,500 feet AGL. Under baseline conditions, about 20 percent of A-10 VFR overhead flight pattern altitude operations are conducted using a 1,500-foot AGL overhead flight pattern altitude. An A-10 aircraft flying in a configuration typically used while maintaining pattern altitude generates an  $L_{max}$  of 68 dB directly beneath the flight path, while the same aircraft operating at 1,500 feet AGL generates an  $L_{max}$  of 73 dB. The 5-dB difference in individual overflight noise level would be expected to be noticeable.

The decrease in overhead flight pattern altitude would affect the overhead flight pattern altitude used by A-10 aircraft during approaches when conducting any of several types of VFR maneuvers. A-10 pilots approaching Moody AFB under VFR will often conduct an “overhead pitch,” during which the aircraft crosses the runway threshold at pattern altitude and then circles back around to line up on the runway a second time. Descent from pattern altitude occurs during the final turn and straight-line approach to the runway. A-10 aircraft at Moody AFB rarely conduct second approaches (i.e., aircraft lands and circles to land again). Non-VFR A-10 approaches, A-10 departures, and all operations conducted by aircraft other than the A-10 would not be affected by the Proposed Action. The net result of the Proposed Action on time-averaged noise levels would be relatively minor due to the fact that most flying operations would not be changed in any way.

Noise contours under the Proposed Action and baseline conditions are shown in Figure 4-1 in increments of 5 dB from 65 to 85 dB DNL. (Note: flight tracks shown in Figure 4-1 are representative of actual flight tracks flown, as reported by pilots. Ground tracks vary depending on winds and other factors. Only segments of the flight tracks shown [mainly those closest to the base] would be affected by the pattern altitude change). Minor increases in noise level would occur primarily along the extended runway centerline to the north and south of the installation (where aircraft line up to land on the runway). Minor increases would also occur to the west of the extended runway centerline in location where aircraft conducting overhead pitch maneuvers are lining back up with the runway for their final approach. In these areas, A-10 aircraft would be slightly lower than they typically are under baseline conditions.

The acreage affected by each noise level increment was calculated and is listed in Table 4-1. An additional 59 acres of off-installation land and 5 acres of on-installation land would be affected by noise levels greater than or equal to 65 dB DNL.

**Table 4-1. Acres Affected By Noise Levels Greater Than 65 dB DNL Under the Proposed Action and Baseline Conditions**

Noise Contour Interval (dB DNL)	Baseline Contours (in Acres)			Proposed Contours (in Acres)			On-Base Change	Off-Base Change
	Total	On-Base	Off-Base	Total	On-Base	Off-Base		
65 - 69	3,193	1,453	1,740	3,240	1,455	1,785	2	45
70 - 74	1,565	963	602	1,580	965	615	2	13
75 - 79	752	597	155	754	598	156	1	1
80 - 84	490	488	2	491	489	2	1	0
≥ 85	78	78	0	78	78	0	0	0
Total	6,078	3,579	2,499	6,143	3,585	2,558	6	59

dB = decibels; DNL = day-night average sound level

Noise levels at several representative noise-sensitive locations under the Proposed Action were calculated and compared with noise levels under baseline conditions (Table 4-2). Changes in time-averaged noise level (dB DNL) relative to baseline conditions would be 1 dB or less. Changes in instantaneous noise level of 3 dB or less are not typically noticeable under nonlaboratory conditions.



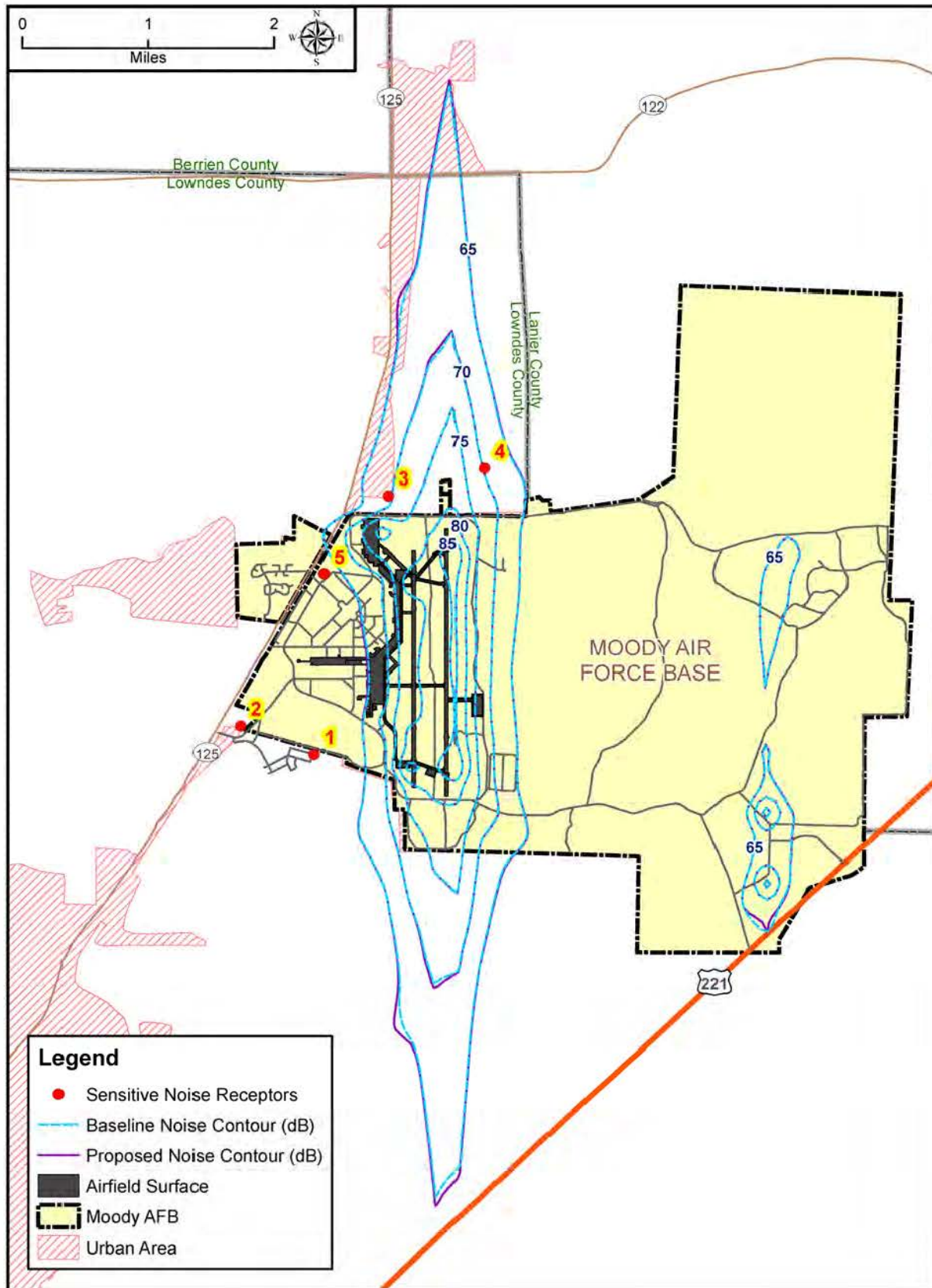


Figure 4-1. Noise Contours (dB DNL) Under the Proposed Action and Baseline Conditions

**Table 4-2. Noise Level at Noise-Sensitive Locations Under the Proposed Action and Baseline Conditions**

Location ID#	Location Description	Baseline DNL (dB)	Proposed DNL (dB)	Change
1	Residential Area #1	58	59	1
2	Residential Area #2	53	53	0
3	Residential Area #3	70	70	0
4	Residential Area #4	70	70	0
5	Child Development Center	63	63	0

dB = decibels; DNL = day-night average sound level

Noise levels at representative noise sensitive locations would not increase by 1.5 dB or greater. The total off-base acreage affected by noise levels greater than 65 dB would increase from 2,499 to 2,558 acres, an increase of approximately 2 percent. Increases in noise level would not generate noise impacts that would be expected to be perceived as significant.

#### **4.1.2 No Action Alternative**

Under the No Action Alternative, the standard A-10 VFR overhead flight pattern altitude would remain at 2,000 feet AGL, and A-10 VFR overhead flight pattern altitude would continue to be lowered temporarily, as necessary, due to weather. No change to standard flight procedures would occur for the A-10 or any other aircraft that operate at Moody AFB. There would be no change to noise levels and no noise impacts as a result of the No Action Alternative.

## **4.2 SAFETY**

### **4.2.1 Proposed Action**

Lowering the standard A-10 VFR overhead flight pattern altitude at Moody AFB from 2,000 feet AGL to 1,500 feet AGL would not result in any significant increase in impacts related to aircraft mishaps and BASH potential. A-10 aircraft currently use the 1,500-foot AGL VFR overhead flight pattern altitude on a temporary basis when weather does not allow VFR flight at 2,000 feet AGL and no additional flight safety issues have occurred.

Lowering the VFR overhead flight pattern altitude could also lower the potential for aircraft mishaps, since at the higher altitude there is a greater chance of stall or “getting behind the aircraft” as descent angle is increased, making descent more

challenging than at lower altitudes. Lowering the VFR overhead flight pattern altitude for the A-10 would put it in the same VFR pattern altitude used by C-130 aircraft. However, since the A-10 and C-130 airspeeds are similar, sequencing along the same flight track is easier and the potential for vertical “stacking” of maneuvering aircraft would be greatly reduced.

The majority of the bird strikes by aircraft at Moody AFB base occur below 1,000 feet AGL (Griffin, 2011). As discussed in Section 3.2, BASH incidents involving sensitive bird species accounted for only 1 percent of total incidents over a seven-year period (2004 through 2010), with all but one of these incidents occurring at or below 1,000 feet AGL. It is unlikely that decreasing the VFR overhead flight pattern would significantly increase the potential for sensitive bird species BASH incidents given that most of these incidents occur at or below 1,000 feet AGL. Turkey/black vultures are the primary hazard encountered at 1,500 feet AGL (Griffin, 2011). At times, vulture activity at the base (black vultures and turkey vultures) is high around the airfield, especially when the vultures are soaring on thermal air currents during fair weather. Several strikes with vultures have occurred, many of them over 1,500 feet AGL. Lowering the A-10 VFR overhead flight pattern altitude may increase the potential for vulture BASH risks, but increased risk potential would be expected to be minimal given current Moody AFB BASH program requirements and mitigations, with potential vulture encounters more likely to occur during fair-weather conditions since vultures require fair weather to reach 1,500 feet AGL or more.

#### **4.2.2 No Action Alternative**

Under the No Action Alternative, the standard A-10 VFR overhead flight pattern altitude would remain at 2,000 feet AGL and it would continue to be lowered temporarily, as necessary, due to weather. No change to any flight safety procedures would occur for the A-10 or any other aircraft that operate at Moody AFB, and there would be no additional flight safety impacts.

### **4.3 AIRSPACE MANAGEMENT**

#### **4.3.1 Proposed Action**

Under the Proposed Action, the standard A-10 VFR overhead flight pattern altitude at Moody AFB would be lowered from 2,000 feet AGL to 1,500 feet AGL, the

same VFR pattern altitude used by C-130 aircraft. Under baseline conditions, an A-10 aircraft maneuvering at pattern altitude (i.e., 2,000 feet AGL) could theoretically fly directly over a C-130 at 1,500 feet AGL while maintaining VFR separation minimums as specified in FAA Joint Order 7110.65T. This sort of vertical “stacking” of maneuvering aircraft could, in some instances, slightly increase the number of aircraft that could be accommodated in the traffic pattern at one time. However, stacked patterns introduce unnecessary airspace management challenges and are not usually implemented at Moody AFB, which generally has excess capacity in the traffic pattern. Because the airspeed used by C-130 and A-10 aircraft are similar, aircraft of both types can be sequenced along the same flight track with little risk of one aircraft overtaking another (Wells, 2011). Effects of the Proposed Action on the capacity of the Moody AFB traffic pattern would be minimal to nonexistent.

A-10 aircraft currently use the 1,500-foot AGL VFR overhead flight pattern altitude on a temporary basis when weather does not allow VFR flight at 2,000 feet AGL. No airspace management issues have arisen when the temporarily lowered A-10 VFR overhead flight pattern altitude is in effect (Wells, 2011). No new airspace management issues would be expected to occur under the Proposed Action.

The Proposed Action would modify the flight procedures followed by A-10 aircraft only; C-130 and H-60 operations would not change. The Proposed Action would not change the size or extent of any existing controlled or restricted area airspace. Impacts to airspace management associated with implementation of the Proposed Action would be minimal and not significant in nature.

#### **4.3.2 No Action Alternative**

Under the No Action Alternative, the standard A-10 VFR overhead flight pattern altitude would remain at 2,000 feet AGL. During times when weather conditions do not allow VFR flying at 2,000 feet AGL, but do allow VFR flying at 1,500 feet AGL, ATC would retain the procedural flexibility to temporarily set the A-10 VFR overhead flight pattern altitude to 1,500 feet AGL. No change to procedures would occur, and there would be no impacts on airspace management.

## **4.4 ENVIRONMENTAL JUSTICE**

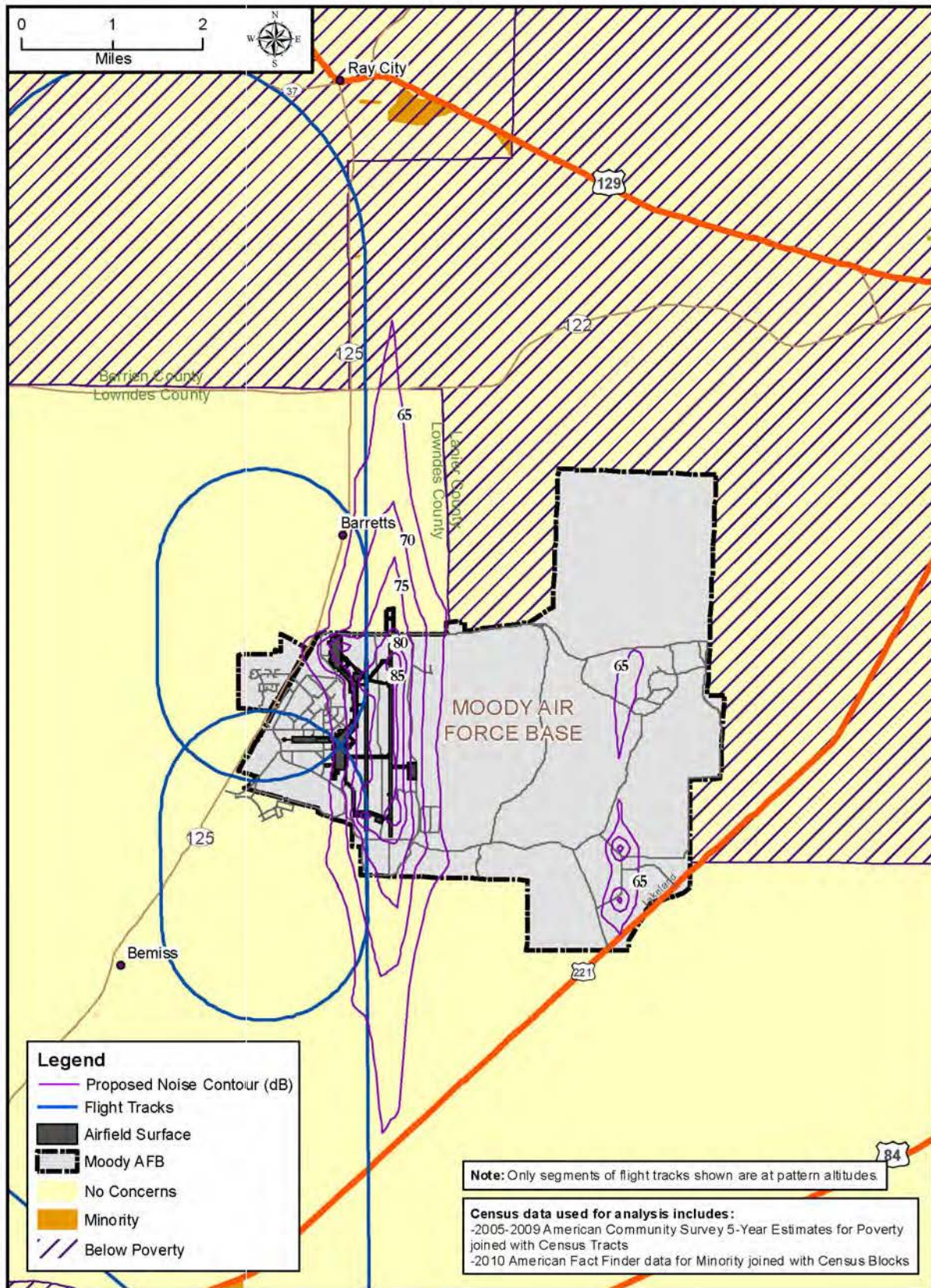
### **4.4.1 Proposed Action**

Flight activity changes associated with the Proposed Action are not expected to create any significant adverse environmental or health effects. As shown on Figure 4-2, only a very small area of Lanier County below the poverty level would be affected by noise levels greater than or equal to 65 dB DNL. (Note: flight tracks shown in Figure 4-2 are representative of actual flight tracks flown, as reported by pilots. Ground tracks vary depending on winds and other factors. Only segments of the flight tracks shown [mainly those closest to the base] would be affected by the pattern altitude change). The area of Lowndes County affected by noise levels greater than or equal to 65 dB DNL is not below the poverty level according to 2010 Census data. However, there are individual low-income units immediately north of Moody AFB. Increases in noise level would not generate noise impacts that would likely be perceived as significant (see Section 4.1.1). No minority populations would be adversely affected in any of the affected counties. Therefore, no disadvantaged populations would be disproportionately affected.

### **4.4.2 No Action Alternative**

Under the No Action Alternative, the proposed changes to the A-10 VFR overhead flight pattern altitude would not occur. No environmental justice effects or impacts to populations of minorities or low-income communities within the vicinity of Moody AFB would occur.





**Figure 4-2. Potentially Affected Minority and Low-Income Areas Within the ROI**

## 5. CUMULATIVE IMPACTS

This chapter discusses the potential for cumulative impacts caused by implementation of the Proposed Action when combined with other past, present, and reasonably foreseeable actions occurring in the ROI.

- Proposed changes to munitions training in the Grand Bay Range
  - These may generate increases in noise levels at Grand Bay Range. At Moody AFB, patterns are typically flown to the west of the installation, largely due to the presence of Grand Bay Range and its associated restricted area airspace to the east of the installation. No significant cumulative noise impacts would be expected to occur as a result of the combination of noise impacts from the proposed lowering of the A-10 VFR overhead flight pattern altitude and the unrelated actions at Grand Bay Range.
  - These would not generate “weapons danger zones” that would affect A-10 aircraft operating at either the current or the proposed pattern altitude. When the restricted area is active, aircraft are directed to conduct traffic pattern maneuvering to the west of the runways to avoid traversing R-3008 (Wells, 2011).
- Proposed increases in sorties flown at Moody AFB
  - This would be expected to increase noise levels near the installation, and these increases would be additive with increases in noise levels associated with the Proposed Action. However, increases in noise level associated with the Proposed Action are minor, and cumulative noise impacts in combination with the proposed increase in sorties would not be expected to be significant.
  - This would somewhat increase demands on Moody AFB ATC facilities. Cumulative airspace management impacts of this action with the proposed lowering of the A-10 VFR overhead flight pattern altitude would not be expected to be significant.

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## **6. SPECIAL OPERATING PROCEDURES AND MITIGATIONS**

This chapter summarizes special operating procedures and mitigation associated with this EA. *Special operating procedures* are measures that would be implemented to address minor potential environmental impacts associated with implementation of the proposed action, while *mitigations* are measures that would be implemented to reduce significant adverse environmental impacts to less than significant levels.

### **6.1 SPECIAL OPERATING PROCEDURES**

No special operating procedures have been identified. Standard flight and BASH procedures would serve to minimize any potential impacts associated with the proposed lowering of the VFR overhead flight pattern.

### **6.2 MITIGATIONS**

No mitigation measures would be necessary to reduce any adverse impacts to below significant levels.

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## **7. PERSONS AND AGENCIES CONTACTED**

<b>Name</b>	<b>Title/Responsibility</b>
Rebecca Lopez	Moody AFB Environmental Planner / NEPA Program Manager
Timothy Wells	Moody AFB Airspace Manager
MSgt Michael Merritt	Tower Chief Controller
MSgt Aniya Lamyotte	RAPCON Assistant Chief Controller
Robert Townson	Ops/Procedures Standardization
John Griffin	Wildlife Biologist / 23 WG/SE

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## **8. LIST OF PREPARERS**

Kevin Akstulewicz

12 years, environmental science

B.S., Environmental Science and Policy

Project Manager

Mike Nation

11 years, environmental science

B.S., Environmental Science

GIS

Jay Austin

12 years, environmental science

B.A., Biology, 1999

Noise and Airspace

Mike Deacon

20 years, environmental science

B.S., Environmental Health

B.S., Environmental Studies

Safety/Environmental Justice

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## 9. REFERENCES

- Federal Interagency Committee on Noise. 1992. Federal Agency Review of Selected Airport Noise Issues. Washington D.C.
- Federal Interagency Committee on Urban Noise. 1980. *Guidelines for Considering Noise in Land Use Planning and Control*. Washington, D.C. NIIS PB83-184838.
- Griffin, John C., 2011. Personal communication via email between John Griffin (23WG/SE) and Mike Deacon (SAIC) regarding BASH at Moody AFB, 13 October 2011.
- Moody AFB, n.d. *A-10 In-Flight Guide*.
- Occupational Safety and Health Administration (OSHA). 1983. "Occupational Noise Exposure Standard." Code of Federal Regulations Title 29, Part 1910, Sec. 1910.95 (29 CFR 1910.95).
- U.S. Air Force, 2008. *Integrated Natural Resources Management Plan. Moody AFB, Georgia. 1 October 2001 through 30 September 2012*. June 2008.
- U.S. Air Force, 2009. *23d Wing Plan 91-212 Bird-Aircraft Strike Hazard (BASH)*, Moody AFB, Georgia. October.
- U.S. Air Force, 2010. *Air Force Tactics, Techniques and Procedures 3-3.A-10*, dated 11 February 2010.
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- U.S. Environmental Protection Agency (USEPA), 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With and Adequate Margin of Safety. March.
- Wells, T., 2011. Personal Communication with Mr. Timothy Wells, 23 OSS/OSOA on 8 September 2011.

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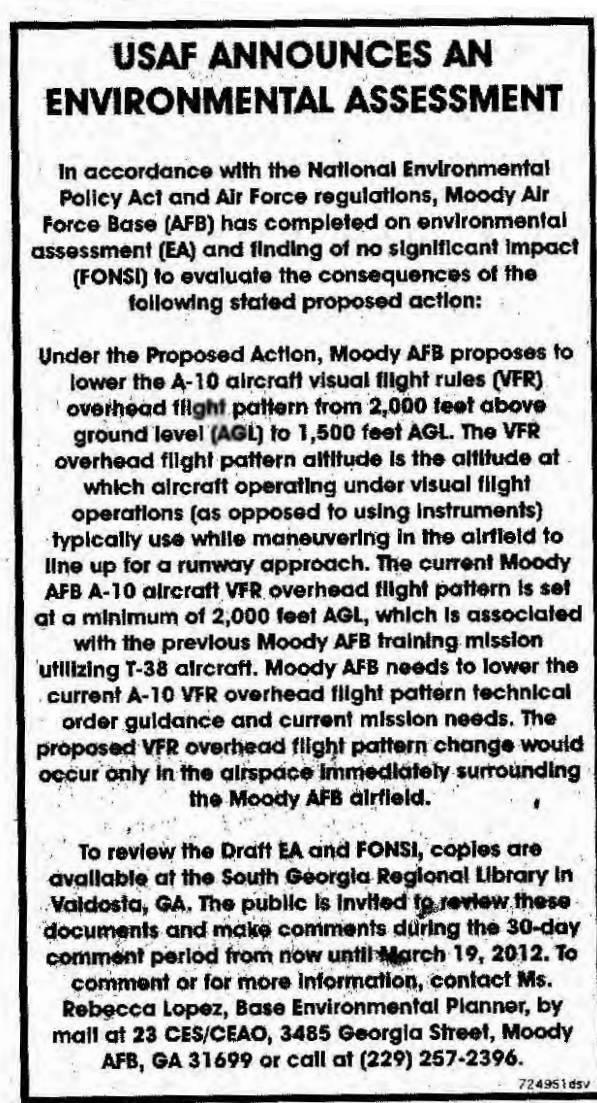


**APPENDIX A**  
**PUBLIC INVOLVEMENT**



## PUBLIC INVOLVEMENT

The Air Force published a public notice in the *Valdosta Daily Times* on February 19, 2012, inviting the public to review and comment on the EA (available at the South Georgia Regional Library in Valdosta, Georgia). The Air Force also provided the following agencies copies of the EA for review and comment: Georgia State Clearinghouse, Lowndes County Commission, and the City of Valdosta. The public comment and agency review period lasted 30 days. The Georgia State Clearinghouse responded indicating that the State had no issues with the proposed project. No other comments were received. The notice and agency correspondence are provided below:





DEPARTMENT OF THE AIR FORCE  
23RD CIVIL ENGINEER SQUADRON (ACC)  
MOODY AIR FORCE BASE GEORGIA


FEB 20 2012

MEMORANDUM FOR FEDERAL, STATE, AND LOCAL PUBLIC AGENCIES, OTHER  
INTERESTED PARTIES, AND MEMBERS OF THE PUBLIC

FROM: 23 CES/CD  
3485 Georgia Street  
Moody AFB, GA 31699

SUBJECT: Proposed Lowering of Flight Pattern Altitude at Moody AFB, GA.

1. Enclosed please find a copy of the Draft Environmental Assessment (EA) the U.S. Air Force has prepared for the proposed lowering of the Moody AFB A-10 aircraft visual flight rules (VFR) overhead flight pattern from 2,000 feet above ground level (AGL) to 1,500 feet AGL.
2. The identified options for achieving this goal are presented in the Draft EA as one Proposed Action and one No Action Alternative. The Proposed Action would involve the lowering of the current Moody AFB A-10 aircraft VFR overhead flight pattern (2,000 feet AGL) to 1,500 feet AGL. The current altitude is associated with the previous Moody AFB training mission utilizing T-38 aircraft. Moody AFB needs to lower the current A-10 VFR overhead flight pattern from 2,000 feet AGL to 1,500 feet AGL to meet standard A-10 overhead flight pattern technical order guidance and current mission needs. The proposed VFR overhead flight pattern change would occur in Class D airspace only (airspace immediately surrounding the Moody AFB airfield) and would not affect instrument flight rules overhead flight patterns. At this time, the U.S. Air Force requests your comments on the Proposed Action as discussed in the Draft EA. The U.S. Air Force will select a Preferred Alternative after careful consideration of all comments received on the Draft EA and identify the Preferred Alternative decision in the Final EA in accordance with Title 40 Code of Federal Regulations (CFR) section 1502.14(c).
3. The public comment period for this EA is 30 days. Please provide any written comments within 30 days from receipt of this letter to Ms. Rebecca Lopez at the above address. Libraries should file this document for public access and reference until the public comment period has ended. If you have any questions, please feel free to contact Ms. Lopez by telephone at (229) 257-2396 or by email at [rebecca.lopez@moody.af.mil](mailto:rebecca.lopez@moody.af.mil). Thank you for your participation.

  
JOHN L. EUNICE, III, GS-13, DAF  
Deputy Base Civil Engineer

Attachment  
*Draft Environmental Assessment for QSEU116038 – Lower Pattern Altitude at Moody Air Force  
Base, Georgia*

*Global Power for America*



## OFFICE OF PLANNING AND BUDGET

Nathan Deal  
Governor

Debbie Dlugolenski Alford  
Director

### GEORGIA STATE CLEARINGHOUSE MEMORANDUM EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Rebecca Lopez  
Dept. of the Air Force  
23 CES/CD

FROM: Barbara Jackson *BJ*  
Georgia State Clearinghouse

DATE: 3/20/2012

APPLICANT: Dept. of the Air Force - Moody Air Force Base, GA

PROJECT: Draft EA/FONSI: QSEU116038 - Lower Pattern Altitude at Moody Air Force Base, GA

STATE ID: GA120222023

The applicant/sponsor is advised that DNR's Wildlife Resources Division was included in this review but did not comment within the review period. Should they submit comments within the next two weeks, we will forward to you.

/bj  
Enc.: Southern Georgia RC, Mar. 13, 2012  
GA DOT, Mar. 20, 2012  
GA DNR/EPD, Mar. 12, 2012  
GA DNR/HPD, Mar. 2, 2012

Form NCC  
Oct. 2008

Office: 404-656-3855

AN EQUAL OPPORTUNITY EMPLOYER  
270 Washington Street, S.W., Atlanta, Georgia 30334

Fax: 770-344-3568






HISTORIC PRESERVATION DIVISION

MARK WILLIAMS  
COMMISSIONER

DR. DAVID CRASS  
DIVISION DIRECTOR

MEMORANDUM

TO: Barbara Jackson  
Georgia State Clearinghouse  
270 Washington Street, SW, Eighth Floor  
Atlanta, Georgia 30334

FROM: Elizabeth Shirk   
Environmental Review Coordinator  
Historic Preservation Division

RE: Finding of "No Historic Properties Affected"

PROJECT: **Moody Air Force Base: EA/FONSI, Lower Visual Flight Rules  
Overhead Flight Pattern from 2,000 to 1,500 Feet  
Federal Agency: AF  
GA-120222-023**

COUNTY: Lowndes

DATE: March 2, 2012

The Historic Preservation Division (HPD) has reviewed the information received concerning the above-referenced project. Our comments are offered to assist federal agencies and their project applicants in complying with the provisions of Section 106 of the National Historic Preservation Act.

Based on the information submitted, HPD has determined that no historic properties or archaeological resources that are listed in or eligible for listing in the National Register of Historic Places will be affected by this undertaking. Please note that historic and/or archaeological resources may be located within the project's area of potential effect (APE), however, at this time it has been determined that they will not be impacted by the above-referenced project. Furthermore, any changes to this project as proposed will require further review by our office for compliance with Section 106.

If we may be of further assistance, please do not hesitate to contact Erin Parr, Environmental Review Specialist at (404) 651-6546. Please refer to the project number assigned above in any future correspondence regarding this project.

ES:mcv

cc: Michael Jacobs, Southern Georgia Regional Commission

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254 WASHINGTON STREET, SW | GROUND LEVEL | ATLANTA, GEORGIA 30334  
404.656.2840 | FAX 404.657.1368 | WWW.GEORGIA SHPO.ORG

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GEORGIA STATE CLEARINGHOUSE MEMORANDUM  
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Barbara Jackson  
Georgia State Clearinghouse  
270 Washington Street, SW, Eighth Floor  
Atlanta, Georgia 30334

FROM: MS. JANICE MCKINNON  
SOUTHERN GEORGIA RC

APPLICANT: Dept. of the Air Force - Moody Air Force Base, GA

PROJECT: Draft EA/FONSI: QSEU116038 - Lower Pattern Altitude at Moody Air Force  
Base, GA

STATE ID: GA120222023

FEDERAL ID:

DATE:

- ☒ This project is considered to be consistent with those state or regional goals, policies, plans, fiscal resources, criteria for developments of regional impact, environmental impacts, federal executive orders, acts and/or rules and regulations with which this organization is concerned.

This project is not consistent with:

- ☐ The goals, plans, policies, or fiscal resources with which this organization is concerned. (Line through inappropriate word(s) and prepare a statement that explains the rationale for the inconsistency. (Additional pages may be used for outlining the inconsistencies. Be sure to put the GA State ID no. and any Federal ID no. on all pages).
- ☐ The criteria for developments of regional impact, federal executive orders, acts and/or rules and regulations administered by your agency. Negative environmental impacts or provision for protection of the environment should be pointed out. (Additional pages may be used for outlining the inconsistencies. Be sure to put the GA State ID no. and any Federal ID no. on all pages).
- ☐ This project does not impact upon the activities of the organization.


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**GEORGIA STATE CLEARINGHOUSE MEMORANDUM  
EXECUTIVE ORDER 12372 REVIEW PROCESS**

TO: Barbara Jackson  
Georgia State Clearinghouse  
270 Washington Street, SW, Eighth Floor  
Atlanta, Georgia 30334

FROM:  AVIATION PROGRAMS  
GEORGIA DOT

APPLICANT: Dept. of the Air Force - Moody Air Force Base, GA

PROJECT: Draft EA/FONSI: QSEU116038 - Lower Pattern Altitude at Moody Air Force Base, GA

STATE ID: GA120222023

FEDERAL ID:

DATE:

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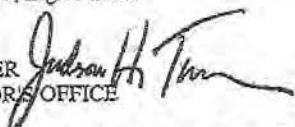


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**GEORGIA STATE CLEARINGHOUSE MEMORANDUM  
EXECUTIVE ORDER 12372 REVIEW PROCESS**

TO: Barbara Jackson  
Georgia State Clearinghouse  
270 Washington Street, SW, Eighth Floor  
Atlanta, Georgia 30334

FROM: MR. JUDSON H. TURNER   
GA DNR-EPD DIRECTOR'S OFFICE

APPLICANT: Dept. of the Air Force - Moody Air Force Base, GA

PROJECT: Draft EA/FONSI: QSEU116038 - Lower Pattern Altitude at Moody Air Force Base, GA

STATE ID: GA120222023

FEDERAL ID:

DATE:

- ☐ This project is considered to be consistent with those state or regional goals, policies, plans, fiscal resources, criteria for developments of regional impact, environmental impacts, federal executive orders, acts and/or rules and regulations with which this organization is concerned.

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## OFFICE OF PLANNING AND BUDGET

Nathan Deal  
Governor

Debbie Dlugolenski Alford  
Director

### GEORGIA STATE CLEARINGHOUSE MEMORANDUM EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Rebecca Lopez  
Dept. of the Air Force  
23 CES/CD

FROM: Barbara Jackson *bj*  
Georgia State Clearinghouse

DATE: March 23, 2012

SUBJECT: GA120222023 -- Moody Air Force Base, GA  
Draft EA/FONSI: QSEU116038 - Lower Pattern Altitude at Moody  
Air Force Base, GA

Attached comments were received from the reviewing agency after the review period and after the project had been closed out. Although the reviewing agency may have already responded to you directly, I have gone ahead and sent you a copy of their comments for your files. We will retain a copy with our files also.

Thank you.

/bj  
Attachment

Office: 404-656-3855

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270 Washington Street, S.W., Atlanta, Georgia 30334

Fax: 770-344-3568

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TO: Barbara Jackson  
Georgia State Clearinghouse  
270 Washington Street, SW, Eighth Floor  
Atlanta, Georgia 30334

FROM: MR. TERRY WEST  
GA DNR WILDLIFE RESOURCES DIV.

APPLICANT: Dept. of the Air Force - Moody Air Force Base, GA

PROJECT: Draft EA/FONSI: QSEU116038 - Lower Pattern Altitude at Moody Air Force  
Base, GA

STATE ID: GA120222023

FEDERAL ID:

DATE:

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